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PRELIMINARY ISSUE

A.P. 14.10.21

## INSTALLATION INSTRUCTIONS

IIN-D119-796

### *Crosstube Installation*

AGUSTA AW119 MKII MODELS

CANADA  
DEPARTMENT OF TRANSPORT  
AIRCRAFT CERTIFICATION  
BRANCH

DAO # 01-O-01  
APPROVED

BY: \_\_\_\_\_  
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**REVISION RECORD**

Revision No.	Issue Date	Description
A	14.09.15	New Issue

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## 1.0 INTRODUCTION

The Dart Crosstube installations are replacement for the following Agusta AW119 MKII (or equivalent) crosstubes:

CROSSTUBE	DART INSTALLATION	AGUSTA INSTALLATION	DART COMPATIBLE SKIDTUBES
Forward	D119-796-101 D119-796-103	M031-01S007-043	D119-646-011/-012 D119-646-111/-112 D119-646-211/-212
Aft	D119-796-201 D119-796-203	M031-01S008-043	D119-646-013/-014 D119-646-113/-114 D119-646-213/-214

The Dart D119-796-101/-103/-201/-203 Crosstubes are direct replacements for the Agusta AW119 MKII model crosstubes listed above. The D119-796-101/-201 Crosstubes are the standard crosstubes with peg steps installed while the D119-796-103/-203 Crosstubes are provided without peg steps for customers who prefer to use the D119-675-011/-012 Heli-Access Steps. The Dart Crosstubes are compatible with the D119-646 Skidtubes certified per FAA STC SR02024SE (Ref TC Letter of Acceptance P-09-0407-RDIMS-5400317).

The components in the Dart Crosstube Installations are as defined in the tables in section 5.0 of this document. The last 3 digits of the Dart Crosstube Installation Part No. designate the different Dart Installations. For convenience, only the last three digits of the Part No. are listed on the top row of each table. The quantity of each component which is included in the D119-796-101 Crosstube Installation, for example, is as defined in the column labeled -101.

## 2.0 GENERAL NOTES

### COMPATIBILITY

Compatibility of this installation with the aircraft is the **responsibility of the installer**. Ensure that this installation does not conflict with a previous modification.

### WORKMANSHIP

Unless otherwise stated, all workmanship should be to the standard set by the Aircraft Maintenance Manual as well as standard practices outlines in AC 43.13-1B & 2B.

### CONTINUING AIRWORTHINESS

This installation should be maintained in accordance with the Instructions for Continued Airworthiness **ICA-D119-796**. Refer to the Aircraft Maintenance Manual for standard shop practices not referred to in these Installation Instructions.

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### 3.0 INSTALLATION PROCEDURE

#### 3.1 D119-796-101/-201/-103/-203 CROSSTUBE INSTALLATION

- 3.1.1 For installation on Dart D119-646-XXX and OEM Skidtubes, loosely install (qty 2) AN5C35A Bolts, (qty 4) NAS1149C0563R Washers and (qty 2) MS21043-5 Nuts per saddle as shown in Figure 3.1.
- 3.1.2 For installation with OEM skidtubes/saddles loosely install an additional (qty 6) AN5C6A Bolts and (qty 6) NAS1149C0563R Washers per saddle as shown in Figure 3.2.
- 3.1.3 Jack up the aircraft in preparation for crosstube installation in accordance with applicable Aircraft Maintenance Manual.
- 3.1.4 Position the assembled gear under the aircraft and loosely install the aft crosstube using OEM hardware in accordance with Aircraft Maintenance Manual (reference Figure 3.3). Do not install OEM M031-01S011-101 Lower Support or associated U-bolt fasteners.
- 3.1.5 Loosely install fwd crosstube using OEM hardware in accordance with Aircraft Maintenance Manual (reference Figure 3.4).
- 3.1.6 Install OEM 109-0570-32-111/-112 Damper Assemblies and grounding strap in accordance with Aircraft Maintenance Manual (reference Figure 3.5).
- 3.1.7 Torque all OEM fasteners in accordance with Aircraft Maintenance Manual. Torque AN5C35A and AN5C6A Bolts 100-140 in-lbs (11.3 – 15.8 Nm).
- 3.1.8 Lower aircraft onto ground and remove hoisting equipment. Verify that the aircraft is set correctly onto the crosstubes.
- 3.1.9 Update the aircraft log book to indicate installation of the D119-796-XXX kit and adjust weight and balance record for the aircraft with the weight and balance data provided in section 4.0 of this document

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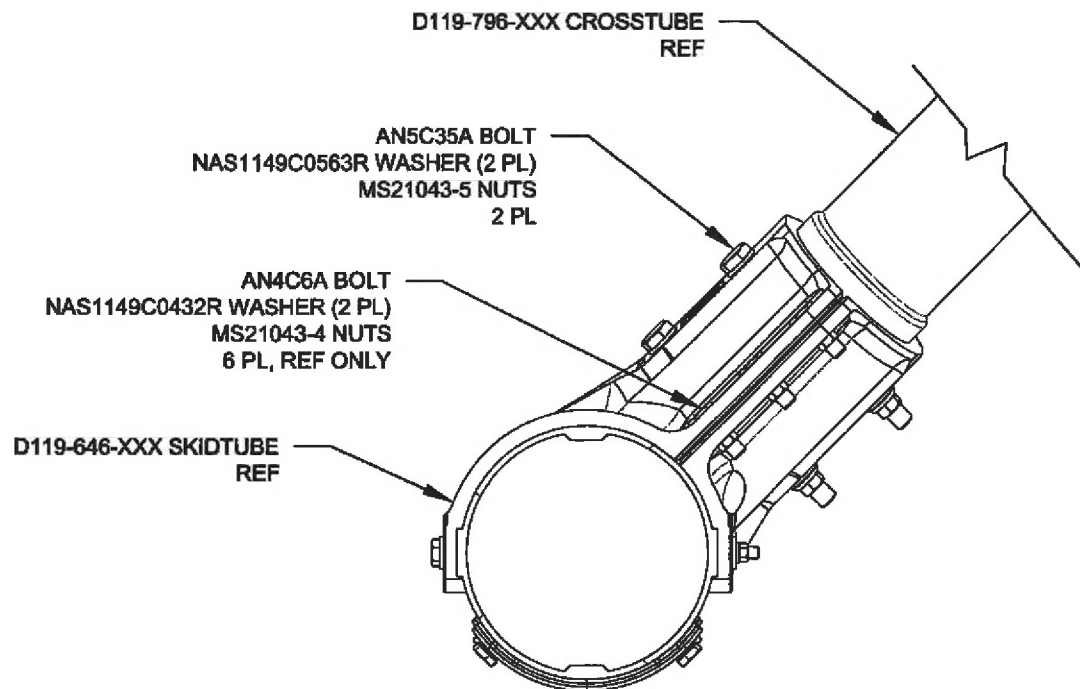


Figure 3.1 - Installation of D119-796-XXX Crosstubes to Dart D119-646-XXX Skidtubes

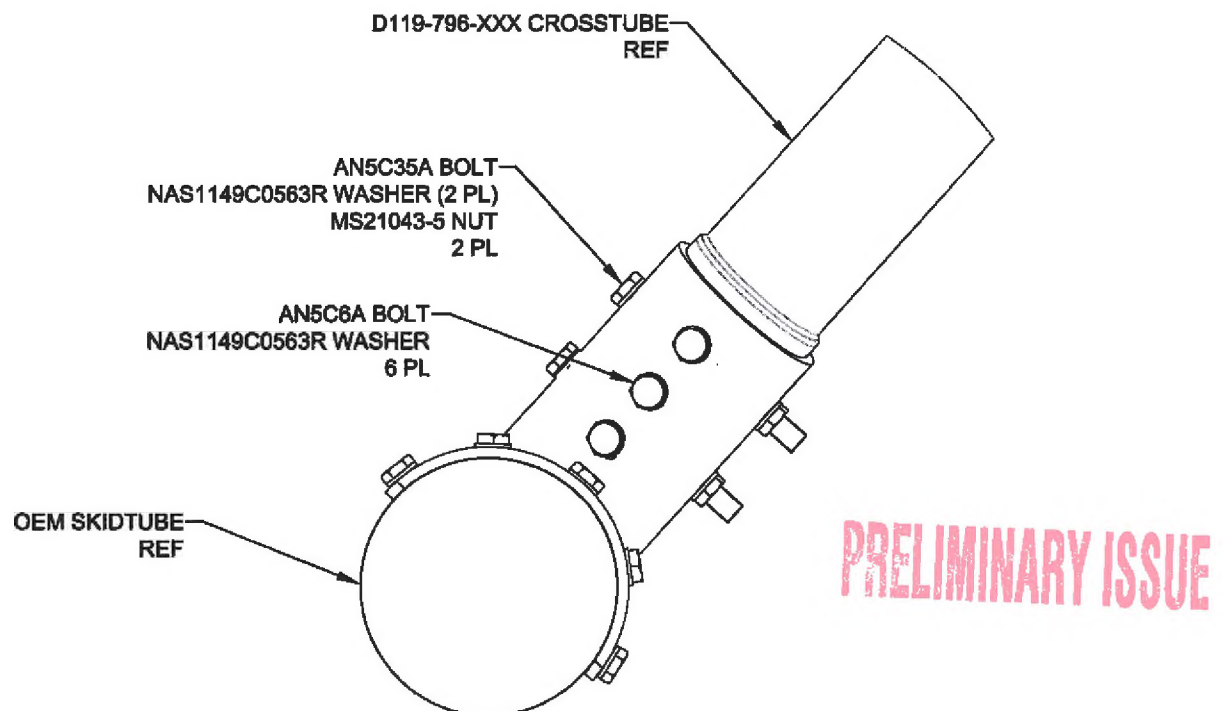


Figure 3.2 – Installation of D119-796-XXX Crosstubes to OEM Skidtubes

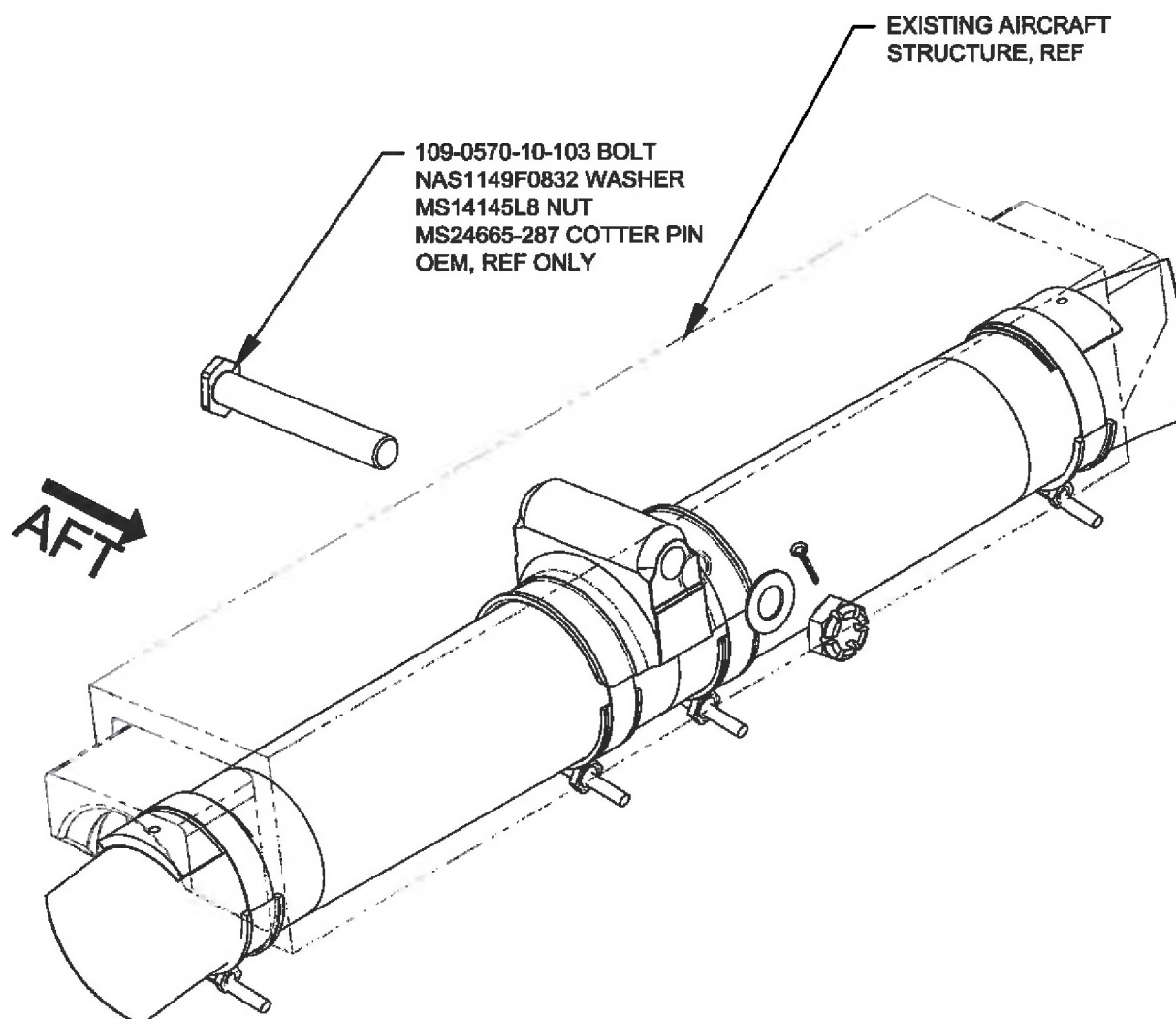


Figure 3.3 – D119-796-201/-203 Aft Crosstube Installation

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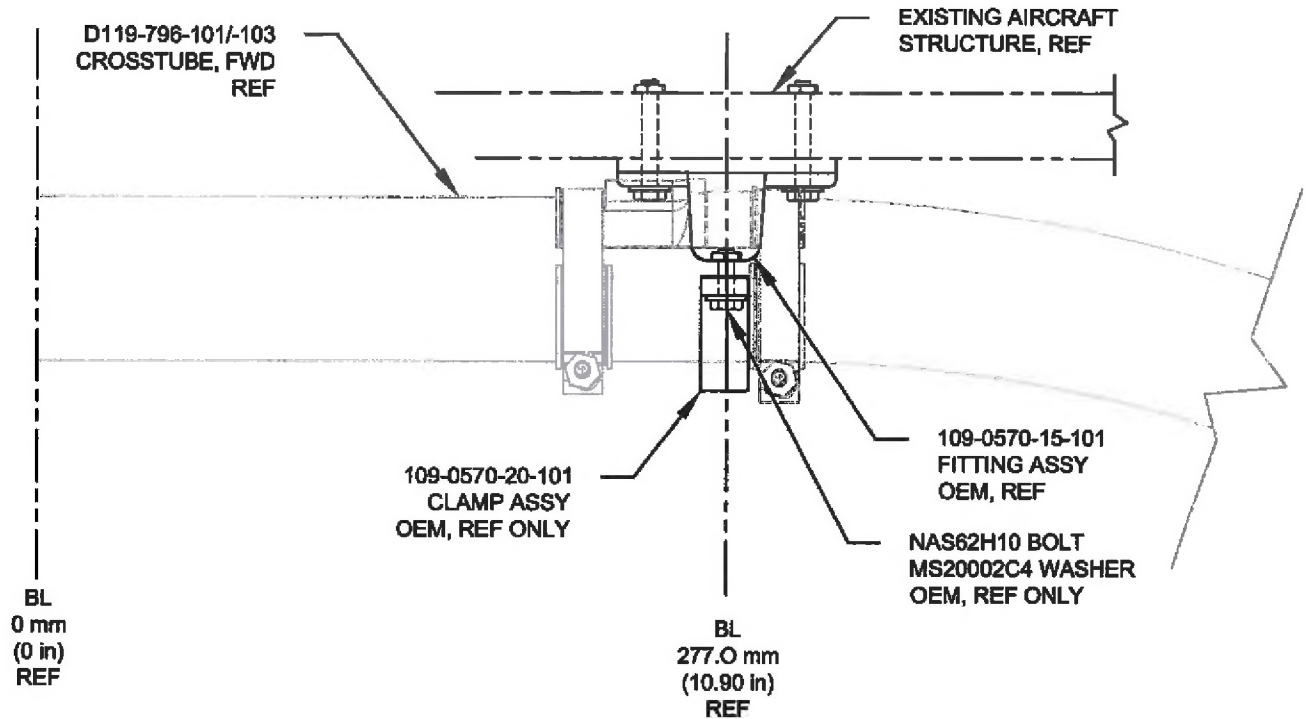


Figure 3.4 – D119-796-101/-103 Fwd Crosstube Installation

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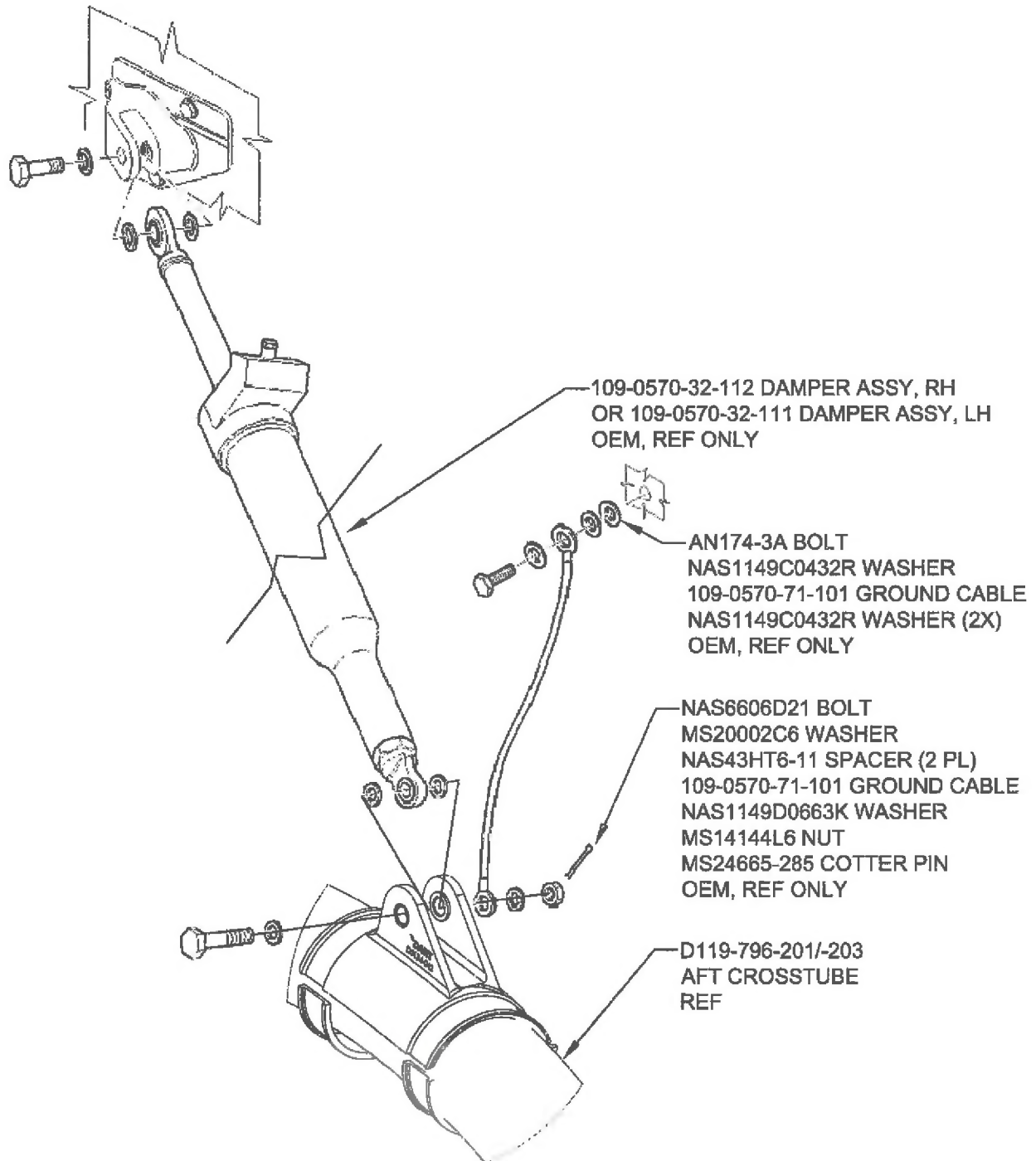


Figure 3.5 – D119-796-201/-203 Aft Crosstube Damper Installation

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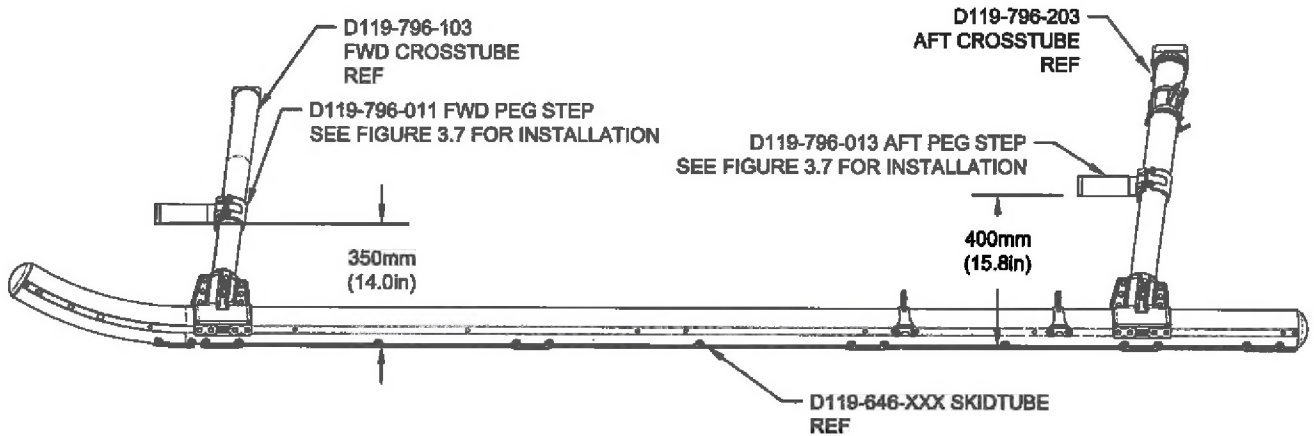


### 3.2 D119-796-011/-013 PEG STEP INSTALLATION

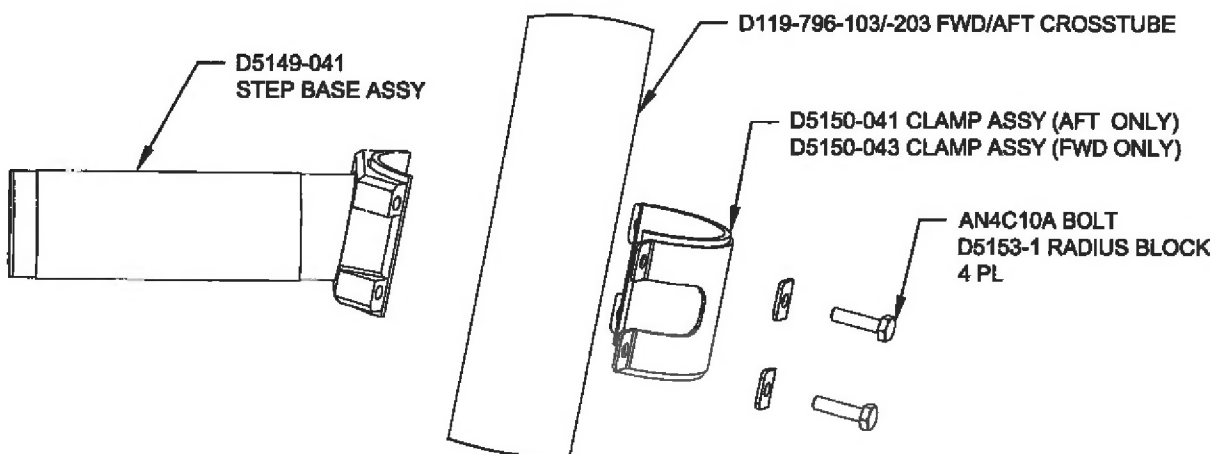
3.2.1 Install D119-796-011/-013 Peg Steps in accordance with Figure 3.6 & 3.7.

3.2.2 Torque AN4C10A bolts 50-70 in-lbs (5.6 – 7.9 N-m).

3.2.3 Update the aircraft log book to indicate installation of the D119-796-XXX kit and adjust weight and balance record for the aircraft with the weight and balance data provided in section 4.0 of this document.



**Figure 3.6 – D119-796-011/-013 Peg Step Installation Height**



**Figure 3.7 – D119-796-011/-013 Peg Step Installation**

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#### 4.0 WEIGHT AND BALANCE

The following weight and balance information is for Dart crosstube installations only. The weight and balance of the crosstubes being replaced are the responsibility of the installer.

DART CROSSTUBE P/N	DESCRIPTION	WEIGHT	STA	MOMENT
D119-796-101	FWD CROSSTUBE INSTALLATION WITH PEG STEPS	22.4 lb (10.1 kg)	71.7 in (1821 mm)	1606 in-lb (18.4 m-kg)
D119-796-201	AFT CROSSTUBE INSTALLATION WITH PEG STEPS	30.7 lb (13.9 kg)	169.2 in (4298 mm)	5194 in-lb (59.7 m-kg)
D119-796-103	FWD CROSSTUBE INSTALLATION W/O PEG STEPS	18.1 lb (8.2 kg)	72.3 in (1836 mm)	1309 in-lb (15.1 m-kg)
D119-796-203	AFT CROSSTUBE INSTALLATION W/O PEG STEPS	26.3 lb (11.9 kg)	169.3 in (4299 mm)	4453 in-lb (51.2 m-kg)
D119-796-011	FWD PEG STEP KIT	4.3 lb (1.95 kg)	70.1 in (1780 mm)	280 in-lb (3.5 m-kg)
D119-796-013	AFT PEG STEP KIT	4.4 lb (2.0 kg)	166.7 in (4235 mm)	733 in-lb (8.5 m-kg)

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## 5.0 PARTS LIST

## 5.1 STANDARD GEAR CROSSTUBES

Item	-101	-201	-103	-203	-141	-241	-151	-251	Part Number	Description
	X								D119-796-101	FWD CROSSTUBE INSTALLATION WITH PEG STEPS
		X							D119-796-201	AFT CROSSTUBE INSTALLATION WITH PEG STEPS
			X						D119-796-103	FWD CROSSTUBE INSTALLATION W/O PEG STEPS
				X					D119-796-203	AFT CROSSTUBE INSTALLATION W/O PEG STEPS
			1		X		1		D119-796-141	CROSSTUBE INSTALLATION, STANDARD FWD, W/O PEG STEPS
				1		X		1	D119-796-241	CROSSTUBE INSTALLATION, STANDARD AFT, W/O PEG STEPS
	1						X		D119-796-151	CROSSTUBE INSTALLATION, STANDARD FWD, WITH PEG STEPS
		1						X	D119-796-251	CROSSTUBE INSTALLATION, STANDARD AFT, WITH PEG STEPS
1					4	4			D2873-043	RADIUS BLOCK
2						1			D5122-1	CENTER SUPPORT
3						6			D5123-1	CLAMP CUSHION
4					4				D5123-3	CLAMP CUSHION
5						2			D5123-5	CLAMP CUSHION
6					2				D5124-1	FWD SUPPORT
7						1			D5134-041	DAMPER SUPPORT ASSY, LH
8						1			D5134-042	DAMPER SUPPORT ASSY, RH
9						1			D5136-1	CONTACT PAD, LH
10						1			D5136-2	CONTACT PAD, RH
11							1	1	D5149-041	STEP BASE ASSY
12								1	D5150-041	CLAMP ASSEMBLY
13							1		D5150-043	CLAMP ASSEMBLY
14							8	8	D5153-1	RADIUS BLOCK
15							8	8	AN4C10A	BOLT
16					4				MS21920-24	CLAMP
17						6			MS21920-25	CLAMP
18						2			MS21920-28	CLAMP
19	4	4	4	4					AN5C35A	BOLT
20	12	12	12	12					AN5C6A	BOLT
21	4	4	4	4					MS21043-5	NUT
22	20	20	20	20					NAS1149C0563R	WASHER

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**5.2 CROSSTUBE ACCESSORY KITS**

Item	-011	-013	Part Number	Description
	X		D119-796-011	FWD PEG STEP KIT
		X	D119-796-013	AFT PEG STEP KIT
101	8	8	D5153-1	RADIUS BLOCK
102	2	2	D5149-041	STEP BASE ASSY
103		2	D5150-041	CLAMP ASSEMBLY
104	2		D5150-043	CLAMP ASSEMBLY
105	8	8	AN4C10A	BOLT

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